

THE ART OF FRESCO PAINTING

PURE TECHNIQUE & ACTUAL RENAISSANCE

THE FOLLOWING LECTURES WERE GIVEN
AT THE AMERICAN SCHOOL OF FINE ARTS
— PALAIS DE FONTAINEBLEAU —

BY

R. LA MONTAGNE S^t HUBERT

LAURÉAT DE L'INSTITUT DE FRANCE



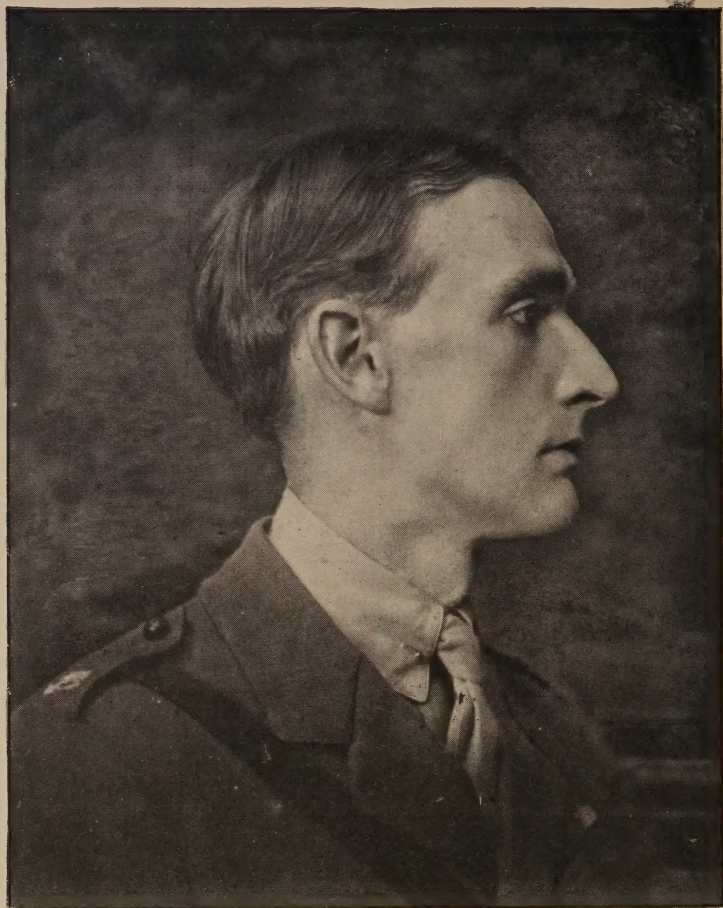
FREDERIC FAIRCHILD SHERMAN
NEW-YORK

1924

Joel S. Kenney

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FRESCO PAINTING



R. LA MONTAGNE SAINT-HUBERT

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THE STUDIO OF FRESCO PAINTING IN PALAIS DE FONTAINEBLEAU

To the memory of
LLOYD WARREN

WHO WORKED FOR SO MANY YEARS
AND SO FAITHFULLY IN THE CAUSE OF
ARTISTIC EDUCATION

and to promote
FRANCO-AMERICAN UNITY

INTRODUCTION

The art of fresco-painting has been neglected for so many years that any attempt to revive it should be hailed with gratitude and delight. For of all the methods of mural decoration, it is the one that most successfully fulfills the difficult problem of painting on wall surfaces. It can and should be rapidly executed and, not only does it dry « flat », so that it can be seen from any angle and in any light, but it imparts an atmospheric quality, a texture and a surface that make it really form part of the wall upon which it is painted.

The author of this treatise has made an exhaustive study of the medium. A young man, he, like many another French man, did his part nobly in the war, serving for twenty six months in the artillery until, in July 1916, he was wounded for the second time and lost one of his eyes. After ten months in hospital, he was definitely reformed but, notwithstanding this fact, joined the Y. M. C. A. and while in it, met several American architects who induced him to come to America. This contact with Americans gave him great pleasure and he has wished to keep in touch with our eager young people.

In spite of the loss of time incident to the War, M. de Saint-Hubert has kept close to his art and has executed some important commissions for the City of Paris. He has too, in collaboration with his master, Mr. Paul Baudouin, taught fresco painting at the Ecole des Beaux-Arts in Paris and (of more special interest to Americans) in the newly created Fontainebleau School of Fine Arts, where the atelier, with its rough stone walls that can be plastered at will, is admirably adopted to the work. In it, the students have painted in fresco with the greatest enthusiasm and it is they who have persuaded M. de Saint-Hubert to publish these notes for the benefit not only of themselves but also for the use of other students and painters who are interested in fresco painting.

As he explains in his text, he feels that, besides reviving the old formulae of a beautiful art, we must add to them something that will make them conform to our modern ideas, to our recent conceptions of art and graft upon the old stem, new ideas, thus giving to fresco painting and added charm and new life, for, as Rodin puts it :

« Un art qui a la vie, ne restaure pas les œuvres du passé, il les continue. »

An art which is alive, does not alone revive works of the past, it continues them.

ERNEST PEIXOTTO

LAPIS-LAZULI

Six centuries ago, the Queen of Cyprus sent out to the Occident in a precious urn, together with a sunlit thought, a little bit of that precious and powerful blue of her country, that the painters grouped around Giotto might mingle its deep symbol in their artistic prayers, rising daily and clinging as it were to the vaulted roof of the High Church of St. Francis of Assisi.

I have often admired that little cut porphery vessel, wherein there still seems to remain the faintest trace of ultramarine : that precious blue which has enchanted generation after generation.

Admirably employed in those frescos, it vibrates before our eyes with the same power as of yore, as well as by the mysterious attraction of its inimitable substance.

THE RENAISSANCE OF FRESCO PAINTING

ITS PRACTICAL ADAPTATION TO THE ADORNMENT OF MODERN CONSTRUCTION AS A DURABLE AND ECONOMICAL PROCESS

Before commencing to write on the technique of Fresco painting, I should like to focus, as it were, the very sense of this artistic manner, obliterate all confusion as well as any gross errors of interpretation.

« Fresco », then, as the word itself implies, signifies any manner of painting on or with fresh mortar. Let us then join the words « fresco » and « fresh mortar » in order to avoid the confusion which during the past century and even in our own days have attributed the name « fresco » to many tempera paintings executed on plaster or dry mortar, and, in some cases, even to marouflé canvas, as for example the marvellous decorations by Puvis de Chavannes in the Pantheon in Paris.

As a prelude to this technical side it might be interesting to note a few historical details : a history which, though but summary, might even go as far back as the frescos of Antiquity (see Vitruve, book VIII, chap. III),

executed in almost identical manner, yet born in far distant countries, each completely foreign to the other, arriving at length at the marvellous development of mural painting in France and Italy. Such a work would, among other things, serve to classify exactly the divers methods of painting, and though differentiating by a precise denomination would leave to the fresco its veritable character of decoration, which is essentially mural, since, in reality, it must be executed there where it is to remain.

Great art epochs about to flourish direct the great epochs of fresco painting ; harmony by simplicity, to wit, the prolonged study, deep reflection, complete conception in view of a rapid execution, which, because definite and irrevocable, must be a whole combined of power and soberness.

Numerous other considerations, which from the very beginning, impress the artist with the imperious necessity of executing his work with all rapidity ; in consequence finding himself face to face with his work, knowing exactly what he wants to do, and in possession of all his means and necessities of execution.

However, this long preparation ought not to discourage the beginner, but rather lead him on, progressively, passing from deep technical analysis to the wonderful and powerful synthesis which, with the soberness of means of expression are the two primordial qualities of fresco painting.

Nor must the colour be forgotten ; that petrification of tone which, placed on the fresh mortar, penetrates at the same time that it carbonates it, and finally emerges like the purest of coloured enamels, *cloisonné*, as it were, in the thousand shapes of the objects represented with the power of intense light that the dry lime adds by transparency. And this no other mode of decoration, no other means of painting, can offer with any such force.

The superiority affirms itself in the study of the old masters, many of whom handled at different times both fresco, oil, or egg painting. But it is noticeable that, when they employed fresco, they became simpler, and, therefore, greater.

Far be it from me to criticize the « *metier* » or craft of oil painting. What I seek is rather to obtain for the fresco the place that it always has occupied during the great Art periods.

In France, the consciousness of this superiority has made enormous strides in the past few years, and every day sees this opinion growing.

Let us by our endeavours — and do yourselves by availment of the American people's marvellous power of adaptation and of « making good » — foster this revival of Beauty, Harmony, and Eye-delight.

For a long time, the practice of fresco painting fell into disuse and its technique was almost lost. Unsuccessful efforts of artists, though talented and enthusias-

tic for this fine craft, gave rise to the utterly erroneous idea that fresco is unsuitable for damp countries. By repeated investigations, Victor Mottez was able to add valuable data to the meagre information we had regarding the old fresco painters ! methods of execution. Lastly, my master Paul Baudoin, a pupil of Puvis de Chavannes, who was very fond of this art, was able, through stubborn and untiring efforts carried on during his whole lifetime, to pull aside the veil which ever since the Renaissance bafflingly concealed the secrets of fresco painting. At the time of his earlier endeavours a large number of the Italian Primitives' finest frescoes were still covered over with plaster or white paint under which Vasari had caused to be hidden in numerous churches, wonderful decorations considered as unworthy by contemporary prejudiced fashion. The walls of Santa Corce in Florence were whitewashed all over. My master chiefly made a point of studying and reviving pure craftsmanship, so mighty in its soberness, as established by the Primitives and, above all, by Giotto. Some very important works carried out by him in Paris and in the French provinces are to this day as fresh as when made.

No oil painting has been able to conserve, even after a less long existence, the exact colours which the artist created for it. They all seem to wear the amber veil of things of the past.

The petrification of the colour in a fresco, when the

reaction has been well calculated, produces an eternal youth, absolutely unassailable by either air or light.

Fresco painting flourished wonderfully in France from the XIIIth to the XVth century and numerous are the examples of it preserved for our admiration.

Religious sentiment existed in all times, and I might say in all the divers regions of the globe, the most powerful stimulant of artistic manifestations that man sought to produce by most different and varying means. Temples and Cathedrals have come down to us as the most grandiose realizations of that close collaboration of many different beings imbued with a single thought working, toward a common end : the plan of the edifice drawn by the architect, the stone placed by the mason, the paintings which finally covered the walls were so many prayers offered and, modulated, by the spiritual directors of those great epochs.

But, « nothing is so refreshing », the head of a large business concern told me, « as the contrast at the end of a hustling day's work, of a few moments in the face of a beautiful landscape. City life in Paris deprives us of this repose, but I find it just as complete when gazing at the fine frescoes you have painted for me on the walls of my smoking room. Such work really gives one an impression of space and light ». And I was more deeply touched by this layman's outright sentiment linked up straight with the wondrous material

of fresco painting, than I would have been by an enlightened artist's most knowing compliments.

Frescos attained complete flowering in Italy under Giotto and his pupils : Masaccio, Guirlandaio, Fra Angelico, Benozzo Gozzoli ; then they died out but to be reborn, almost miraculously, by Raphael, Botticelli, before disappearing again beneath the artistic exuberance without Faith, of the « Baroque Style ».

Now that long endeavours and perseveringly repeated attempts have little by little at last recovered for us the old and pure technique of fresco painting, let us note how judiciously the old masters would modify their method of execution according to the places where they had to make a new work and take account as they did of the important influence exerted by climate and materials, the latter being always somewhat different as one moves from one region to another.

Myself, after having closely investigated and ultimately reconstituted the ancient formulae and tradition of this fine craft, have arrived at the definite conclusion that it requires adaptation to our modern ideas and needs.

Fresco painting has revived. To restore it to life, we have had to get at its purest inmost fibers, that is to say, to go centuries back. We must graft deeply; for I feel that in order that it may develop or even just live on, we must adapt it to present-day needs and

numerous are the steps to be devised in order to solve this enticing question of Art.

Through your work and the earnestness you show, I can foresee novel results, which shall charm the world.

THE TECHNIQUE OF FRESCO PAINTING

This is a preliminary outline of the process of the study of Fresco Painting and the knowledge I have gained by long experience.

I first wish to draw attention to the surface called upon to receive the mortar, that is to say the wall.

It may be made of stone, millstone, even of bricks or tiles upon or of cement strengthened with iron bands.

These walls usually covered with rough plaster should be pricked again and joints or seams laid bare whatever their composition may be ; if in the process of this work one finds holes filled up with rubbish inserted between the wall or even parts wide enough of plaster that it would be risky to take out, one ought to drive nails into the wood and the plaster, nails of galvanised iron with large heads or contrive iron stays after which one can place the mortar without the fear of seeing it loosen.

1. If for any cause whatsoever it is not possible to re prick the wall one must make use of parjet, a sort of very light mortar almost liquid that one throws on the wall by means of a small brush.

If the masonry is new, shade the joints lightly, especially if they are of lime and, deeply, if in plaster or cement, afterwards, brush carefully with a dry and hard brush until the dust is completely removed as the said dust might harm the adhesion of the coating.

If the stone, the wall is smooth prick it from place to place with the pick to bring about some roughness so as to make the mortar cling more easily.

The day before one intends to paint, wet the wall, repeatedly and abundantly, commence again the next morning before placing the mortar but in such a way as to moisten the wall that one has to cover as equally as possible and to a certain distance beyond the part which has to be reached by the suction of the wall remaining dry.

A stone wall does not require much water for the mortar does not cling well when it is saturated; brick on the contrary can never receive enough.

Very frequently the surface of the bared wall presents parts of unequal level, when they do not exceed two centimeters and the walls presents what the masons call « hooks » a quality so precious for the good grasp of the coating that one can avoid the levelling of the hollow parts, but for 4 or 5 centimeters it would be risky to fill up these cavities with mortar for the heaviness of this isolated part would inevitably bring about a loosening of the wall.

There one must again have recourse to the « mou-



AMERICAN MEMORIAL HOSPITAL AT RHEIMS

ENTRANCE HALL. PART OF THE DECORATION IN FRESCO

(by R. La Montagne Saint-Hubert)

cheti » (1) which by its fluidity applies itself perfectly and penetrates the joints which clasp as wedging.

Take care to let the reloaded parts well dry before beginning the execution of the fresco namely from 10 to 20 days according to the epoch of the year and the temperature; to neglect to take this precaution would bring about the risk of seeing appear afterward the efflorescence of lime on the fresco itself.

Lime spots are often transitory but, as more often than not, they appear a year or more after the completion of the work, grafting progressively in some way or other into the mortar as far as the painted surface, changing the appearance in a very marked way above all in the smooth parts.

If one has to paint very large surfaces upon which the necessity of erected scaffolding have left holes of any kind stopped up with cement or mortar, one must foresee the shades, light or dark, that they may cause on the coating according to the colour.

If it is impossible to wait until the holes are perfectly dry, it would be better to lay bare these holes and stop them up with rubbish of dry stone and then fill up the orifice with thin bricks with a light layer of cement in the joints which will dry quickly. Besides

1. The « moucheti » kind of very diluted mortar composed of : 1 part of hydraulic lime, 3 parts of sifted sand rather large or 1 part of cement and 2 parts of sand medium size.

solidarity, this smoothing of the wall will give all the necessary qualities for the good execution of the fresco.

MATERIALS

The mortar used for the fresco is composed of sand, lime and water.

The quality of the lime varies according to its origin and the care used in its preparation, slaking, sifting, etc...

The sand must be selected with special care, taken from sand-pits or in preference from the bed of a river and should be siliceous and to a prismatic facet in such a way that when rubbed between two fingers it causes a crispy or rustling sound like that of broken glass.

Sea or round sand generally is unfit for the purpose its surface not bringing the same cohesive strength to the mortar.

One will easily perceive the slightest impurity by putting in a glass of water some of the sand and stirring it for a moment, if the water remains clear one can use the sand.

Finally as one may well understand, the water used successively for the wall, the mortar and the colours must be as pure as possible, for example river or spring water if it presents no mineral compound.

Stagnant water must be excluded, for it always con-

tains salts dangerous to the purity of the mortar and the colours.

The mortar to paint frescoes should be made of one part of lime and two parts of sand (1).

The lime or protoxide calcium pure is used as it is for the preparation of the mortar but the price of it is exceedingly high.

Lime stone is found everywhere in abundance it is a carbonate of lime usually mixed with silica, iron oxide, magnesia, maganes, etc...

If this stone only contains a weak part of foreign matter it nevertheless gives a most appropriate lime for frescoes.

Lime is of three different kinds, *heavy lime*, hydraulic lime and cement, offering various qualities each one may be used for the composition of mortar.

The principal difference of each one is shown by the

1. The sand only fulfils a mechanical purpose, it serves to divide the particles of lime by isolating them to increase the permeability of the mortar and consequently to favour its combination with the carbonic acid of the air and to prevent the matter from shrinking too much in drying.

The Romans used marble dust and Volcan productz (Pouzzolane) capable of being mixed at once with the lime and giving it hydraulic qualities, it is composed of silica alumina, iron protoxide, magnesia, etc.....

The quantity of clay in the Pouzzalane is generally from 68 to 90 for 39 to 10 of lime.

The Pouzzolane contains silica of lime, without their being enough free lime, so that reduced to powder, the silica makes a paste if thrown into the water. One makes use of Pouzzolane mixte with heavy lime. One manufactures Pouzzolane artificially by burning clay.

quantity of silica that they contain and which moderates the duration of the grip of the mortar and its resistance.

The heavy lime which was used in former times is still usually employed for the frescoes ; it contains silica from 0 to 12 o/o of the weight of lime stone (1).

Hydraulic lime contains from 12 to 25 o/o it has the essential faculty of taking up water, thus, its denomination. The cement contains from 28 to 40 o/o, its grip is more rapid in the free air, in water, it acquires a hardness equal to rock of the strongest resistance.

LIME SLAKING

One slakes the lime by fusion. For this purpose, one places it in a large basin in which one sheds a certain quantity of very pure water. If the dose is too weak avoid increasing it in the course of the operation as this would destroy the whole reaction ; wait for the complete cooling (2).

Lime obtained in this manner can be kept a long time before being used. For this purpose cover it with a sufficiently thick layer of sand, old, it gives the mortar more pliability.

1. There exists *heavy lime* containing up to 20 o/o of magnesia a very appreciable quality as the grip is delayed accordingly.

2. Hydraulic lime gains by being slaked with plenty of water, there is an increase of 1/5 of cohesion for the mortar, heavy lime always doubles its volume in water, thin lime only gains about 1/20.

DRY SLAKING

Dry slaking by immersion is what I recommend for *heavy lime*, there is an additional strength given to the mortar. Cemino Cennini described it in his « Work on Art ».

For this operation break up the lime into small pieces and place it in a wicker basket which one then soaks in water for about half a minute, afterwards, spread out the small fragments on a marble slab.

The lime whistles or hisses, bursts and falls into dust, afterwards pass it through a silk sieve, the finest possible (1).

The action of sifting the lime is of the greatest importance for during the slaking there often forms what one may call unslaked fragments, that is to say small parts isolated from the action of the water and if they entered into the composition of the mortar, slaking afterwards progressively would bring about, in consequence, several months after the achievement of the work, the cracking of the mortar on the surface of the fresco.

Watch carefully that while the mason is sifting the lime he avoids a bad habit of breaking the unslaked lime with his fingers and forcing it through the sieve; by far the wisest is to take it away entirely.

1. The hydrate of lime thus obtained can still absorb a small quantity of water, but without any rising of temperature.

The older the lime the better it will be for the fresco. Nevertheless, pay attention and isolate it from all dampness, for, then, the lime, carbonizing with the contact of air, forms granules more or less voluminous which the capsule often resists during the working of the mortar and this meeting of particles of lime on the surface often brings about the entire destruction of the colour at this part.

COLOURS

Fresco painting being, above all, a fresh and solid matter, the choice of colours which may enter into its composition deserves to be studied no less carefully than that of the preparation of the mortar. One must, from the very first, proscribe those, which not resisting well, are susceptible to weaken too much or to disappear and only take products of absolute purity.

The best colours are those of earth or oxyd of iron which offer a large scale of shades going from yellow to brown and from delicate pink to the deepest rose, they are of perfect resistance, such as :

Yellow ochre	Venetian red
Roman ochre	Red ochre
Raw Sienna	Brow red
Burnt Sienna	Raw umber
Pouzzole red	Burnt umber

for blue.

Cobalt and real ultramarine, of perfect resistance but

the very high price is the only drawback to frequent use.

We have in France, Guimet's chemical ultramarine which I have often used and also in the decorations which I executed for the Ville de Paris, in the Salle des Fêtes at the Ecole Professionnelle, rue Debelleyne, it gave me an excellent result by its purity and strength.

Emeraude Green, very resisting, Terra Vert, a delightful colour for Fresco painting, just as it is dull and heavy prepared with oil.

Its use is delicate, it must be presented to the mortar well diluted, laid on lightly so as to arrive at the strength desired to avoid sizing.

Give the greatest attention to its source and use it only in a very pure state and let it be of the best quality ; finally, Mars violet, very solid, but which I avoid using, not liking very much its colour, quality which one can obtain much more delicate by mixing red with cobalt blue and ultramarine. Vermillion : use very moderately and smoked black which to have very solid, must be placed in a manner which I shall describe later on.

Eminent chemists have assured me of the resistance of other colours, such as ; Cobalt Green, Chromate Green, Medium Cadmium, Zinc Yellow, Madder Lake.

For my part, I am not sure of their solidity but besides that, I wish to make an observation which particularly regards taste : the fresco by its destination does not

require such bright colours, I may even say dazzling or gaudy, nor can it support great contrasts, the intensity of which would appear to make holes in the wall, these bright colours should be judiciously used in very small quantities, as a spice added to a dish that one desires to make more tasty, thus keeping to the fresco its character of high simplicity.

PREPARATION OF THE MORTAR

The mortar for Fresco painting is composed of 2 parts sand and 1 part lime, the sand must be used dry, so as to allow of it being mixed very carefully with the lime, that is to say until the uniform colour signals perfection, this is done without water.

This first mixture obtained; spread it on a slab, and imbibe with water as equally as possible, but moderately. All masons have the bad habit of putting too much water and that by interest, for, in this manner, they succeed very quickly in making a mortar which appears perfect but the grip of which will be found accelerated by the excess of water which, besides, brought to the surface by the action of the trowel, will naturally remain there longer; thus, delaying the commencement of the work, to that, must be added the possibility of such mortar detaching itself from the wall during the work.

I cannot mention too often the necessity of scrupu-

lously observing these precautions during the composition of the mortar. It is in beating it ten times longer and vigorously with the trowel that one succeeds in making it supple and unctuous, pliable and agreeable to paint on and one, thus, avoids the risk of provoking cracks which during the desiccation are inevitably produced on the places not firm enough.

Do not neglect this matter, for, to obtain what the Ancients called a *good soaking* and to assure the perfect conservation of the fresco, the artist will only have to paint on the mortar prepared in the morning, the remainder of the day at most, and sometimes during the Summer, in a very hot and dry place, the grip of the mortar, being hastened, it will be well to begin the work as early as possible in the morning.

The mortar mixed with a small quantity of water is of a slower grip the Fresco Painter will therefore, have every interest to look after this matter.

It is quite understood that the preparation of the mortar as well as that of the wall concerns the mason ; but the painter ought to know it in practice and theory, for, the masons capable of executing this work, properly, are few and far between, the painter will find himself more often than not under the necessity of confronting ignorance or the ill-will of his workman, but thus material side will, naturally, not be displeasing to the artist who really loves his Art.

Bringing the mortar to a state of butter might be con-

sidered as completed but one must avoid using it immediately.

Fresh mortar must be placed in a cool and dark room, for example a cellar, if one can obtain one clean enough, in preference in a corner, taking care to make a heap of it and then cover it with a damp tarpauline it can, thus, be kept from 15 to 20 days according to the season.

Each day, one takes enough away for the work to be executed, one will be surprised at its hardness and dryness.

To give it the necessary pliability, one must mix it firmly and, for some time, with the trowel *but without adding water*. The longer it is mixed, the more unctuous it becomes, the water coming back to the surface when it had seemed to be quite evaporated.

The density of the sand has an equally great importance for the preparation of the mortar which will be just as solid and resisting as the sand is large and mixed with heavy lime ; for hydraulic lime or cement it is just the contrary, the finer the sand, the harder the composition becomes.

For work to be executed upon high arches or lofty ceilings the best will be to take sand rather large and to spread with the « taloche » (1) imprinting a rotary movement by compressing very strongly so that it will

1. Kind of a little board in wood with handle.

grip the wall and keep its granite aspect which will give more vibration and depth the painted surface which will be all the more agreeable.

If the grain appears too salient it will suffice to pass lightly over with the trowel to flatten and press it down lightly. For the vertical parts avoid too rough a mortar which offers too ready a place for dust and which would quickly lose its natural purity.

Italian Frescoes are nearly all executed on fine and smooth mortar except high parts of those of Raphaël in the Stauze at the Vatican and which suffice to show in full evidence the superiority of the colour vibration placed on a mortar lightly grained.

This rugosity of the surface permits the carbonic acid of the air to penetrate more deeply the layer of mortar and renders it by this fact more resisting in thickness. It will be preferable to prepare it in this way for exterior decorations but taking care to give it a preparatory coating.

For work of restricted dimensions and likely to be seen closely one might attempt a light coating with a fine finish by means of the trowel, this kind of mortar takes up the tone with much less good will, but only long practice could teach anyone the manner of executing such work in the most suitable way.

If, as I have said the wall on which the fresco has to be executed presents hollows of about 5 centimeters having the night before applied a light coating, in the

morning, the coating being dry one can go over it with a second coating made in advance and composed of:

1/3 *heavy* lime 2/3 of large sifted sand.

This rough cast may have 2 centimeters at the maximum; finally place the last coating that is to say 6 m/m about of a mortar prepared in the same proportion with very finely sifted sand, taking care to press it very firmly against the wall.

To be sure of a good application of mortar on the wall it is preferable to throw it with vivacity as the plasterers do on aiming at stone joints and from distance to distance like a scale, in this way the mortar grips the wall much better one then returns with the « taloche » to fill up the naked spaces applying the mortar in turning it.

To make the mortar level, one fixes on the wall wooden or cement levelling laths over which the ruler can glide with a movement commencing at the bottom and going to the top and from right to left, showing the parts insufficiently covered and levelling the others.

Cennino Cennini indicates the means used by the Ancients which consisted of applying the mortar with the « *buckler* » by pressing very firmly on the wall and by smoothing it afterwards with the trowel, giving it the marble aspect which so many of the old frescoes possess.

I have already expressed, as my own opinion on this subject, that, if the necessity of subtilty of a part of the

composition, such as a child's face, glittering surfaces, etc... imposed this exterior quality of mortar, one could obtain it but the piece once painted by means that Betticelli mentioned as having frequently used and which consists of rolling a bottle over the mortar pressing heavily on it, taking care however to isolate it by means of a sheet of white paper

VERIFYING THE GOOD APPLICATION OF MORTAR

As I already remarked, in consequence of defectuous preparation the mortar should fall off, it is the day of its application on the wall or very soon after. It is easy to know if the grip is good, it suffices to give light tappings on all parts of the mortar, if they give a dull and equal sound it shows that the adherence is excellent, but a more sonorous sound signals a pocket, although it may be but slight, of imprisoned air.

It is easy to make it disappear, the mortar being still fresh by pricking it in several places with a pin and pressing afterwards by means of the trowel when the air will escape and replace the mortar in contact with the wall.

If the coating is already dry and the pocket does not appear to have more than 20 c/m of surface, for example, one may leave it alone, but vaster, one must without hesitation replace the piece.

PAINTING. — PRELIMINARY WORK

Before attempting in detail the way of preparing the colours and to apply them on the mortar one must bear the fact well in mind that the Fresco, of necessity being rapidly executed and without hesitation, each day's work being definite one may fully understand that the Fresco must be well thought over and thoroughly realized in imagination before attempting the execution of it.

The sketch naturally made and very deeply and carefully studied conducts the artist to seek, on the cartoon, the grandeur of execution and the definite character of its composition to the benefit of the view, line and whole perspective, volume and general outline, the great horizon of the synthesis in passing, however, by the most complete analysis : this will explain the considerable number of drawings that the Old Masters have left us, very advanced studies, often repeated with weak variations and which are to be found, at present, spread throughout the museums of Europe and the United States, studies of heads, naked forms and even partly draped, groups of people expressed with extremely studied refinement which proved the evident intention of reproducing them on a large scale.

By observation, these drawings will indicate more



FRESCOES IN VAULTED ROOF OF THE "PETIT PALAIS" IN PARIS
by . Paul Baudouin.

than any words the indispensable character, of the preparatory work of fresco painting.

Although not practicing exactly the same process as the Old Masters, I must, most scrupulously, indicate in such a manner the advantages and show up the inconveniences that their exact application would present particularly in such a different epoch as ours is.

Our sincerity will conduct us without any doubt to manifestations somewhat different, but which will do more for the future benefit of Fresco Painting, than to restrain oneself to the unchangeable repetition of dead things.

Art throughout all epochs, feels the necessity, after periods of weakness, of more or less greater length in the most various branches, to enrich itself with new blood taken from a new civilization.

Our civilization and the modern sense of our aspirations, contain all the power that should give the Fresco Painting a marvellous existence equal to that which it had at its greatest epochs, and the beautiful remains of which are dispersed all over the world, offer us the enjoyment and are a generous fomentation for our wish of a new opening.

The Old Masters placed in scrupulous order the various materials, as well as a colour sketch, that they thought of using, sampled with the greatest care, applied the first roughcast which I already mentioned, upon this rough cast, they traced the large lines of their

composition, so as to judge the effect of the whole in regard to the line and volume of the architecture, the harmony of which was never attacked, besides having in consequence points of accord by degrees of the different pieces executed.

The first sketch was made by means of a black line, but more often red sinopite (1), as certain coating shown by accident or by restoration's works demonstrate.

This colour like cinabresi which is a derivative, is not used in the present time, red ocre replaces it very advantageously, as certain coatings laid bare by accident or restoration work have shown, the old rough-cast allowed to be seen, as well as the line, a manner of sketching in large masses of shade executed with the same colour, a precious effort to better judge the « volume and effect » of the composition, before the decorative distribution of the « colour lines ».

On this completed sketch, they applied the surface of mortar corresponding to the presumed possibility of

1. This sinopite was passed over the rough-cast, simply prepared with water, its nature of oxide of iron offered a grip sufficient for the sketch.

2. At Ravenna, in a church partly destroyed by aeroplanes during the last war, the Frescoes of the arches of the side chapels presumed to be by Giotto, but if not by him, surely of his school, offered on examining the fragments of the broken parts, evidence of two superposed mortars and each one of them covered with a painting, offering the greatest similitude of shape but one, namely the first one traced entirely in camaieu.

the work for the day. The first sketch was of the greatest utility, for it served to confirm the exact correspondance of the parts to be successively added. A tracing taken hastily on the first sketch (that of the rough cast) on a drawing by scale, made by means of the sketch, was placed by making use of the registering-points upon the mortar by means of a metal point carefully sharpened and which left a distinct and clear tracing.

These tracing are to be found engraved on all ancient frescoes; many others for example at Santa Croce at Florence, the head and certain parts of the body a personage in an admirable scene, have been in the course of execution displaced lightly, by care of the artist also as bears witness the first engraved trace that one perceives a little outside or inside of the existing trace and left by the brush.

The criticism that I bring to bear on this old tradition of rough-casting the wall, and the summary sketch made by means of colours simply diluted with water but that the rough-cast, already dry, absorbs no more and which, remaining on the surface will find itself absorbed by the definite mortar, impregnating even to colouring it in places with these colourations so lasting, of oxide or iron.

This is also the reason for which so many frescoes of this epoch have broken away from their rough-cast.

To avoid this quantity of charcoal and colour, atta-

ching to the rough cast and also the lack of facility to draw upon the surfaces. Benozzo Gozzoli used above all first-coating almost smooth, this will well explain why certain parts of his decorations of Campo Santo de Pisa have broken off.

The artists of the Renaissance, brought into use with the cartoon a very superior process, this cartoon prepared after well developed studies and documents, is first of all placed upon the wall on the place the fresco is to occupy ; like the proceedings of the old masters, it offers the same advantages to the search of the principal lines of composition, volume, outline and harmony with the proportions and the architectural character of the monument or the hall to be decorated, besides it will be a precise direction on the point of view of colour all round, to the quality of the tone of the stone, the wood work and material entering into the construction and the decoration of this architecture.

Rectify the cartoon before taking it off the wall upon which one will have a care to trace several indications which ought to remain visible until the completion of the work, they will help the scrupulous search of the joints of each piece which one must pounce successively after the part finished the day before.

These tracings are indispensable, and I cannot impress them sufficiently for no longer having what the Old Masters had in the rough-cast tracing, one might consequently have slight but successive errors

in the wedging, and so annoying that they would lead to the necessity of doing all over again, by pulling down the mortar.

If the hall to be decorated offers the possibility, one will place the cartoon in proximity to the work, in such a way, that one may easily consult it for the general effect; for an arch dôme or vaulted roof surface, it will be preferable to present it daily on the place, even on account of the deformation and the peculiar light of such surfaces.

These precautions taken, one can transfer the tracing in the former way but for more delicacy and also more easily, if the line engraved in the mortar is not indispensable one will prick each line that one imprints on the mortar by means of a pounce containing a red, green or blue according to the principal colour of the panel that one has to execute. Red ochre or Venetian red if one wishes.

Let the « poncif » (1) be very apparent, but I will indicate in preference and in general a mixture of:

6 parts of Terra-Vert

1 part of burnt umber

which will leave on the mortar a well marked and neutral trace, an appreciable thing for delicate parts such as flesh, clouds horizon backgrounds.

For the poncif with engraved line on fresh mortar I

1. « Poncif » pattern for pouncing.

prefer it used in all light parts where sometimes, it affects itself by the different planes of its incision, useful accents in places, but somewhat monotone and mechanical, if one finds them everywhere.

For the drawing of arches and ceilings, the engraved line is the most practical.

The advantages and inconveniences of these two processes are equivalent, it is for the artist to decide, according to his necessity or personal opinion.

While, lingering upon, all these multiple considerations, at first sight, very simple, I would like above all to impress the necessity of taking trouble and precaution of every kind, the decorator wishing to make use of Fresco Painting ought to take constant care.

PREPARATION OF THE VARIOUS TONES

Going back a little to the time when the cartoon is fixed and one is ready to put the mortar on the wall, I wish to mention colours, it is at this moment, in preparing them with special care, devoting enough time to them, that one obtains a good result.

The colours which I have enumerated being placed in front of you, you must seek successively to realize by dry mixing the tone that you have resolved upon for your sketch.

It will be wise to prepare at the beginning, the quan-

tity of tone that one judges will be enough for the whole of the work, taking care, however, to notice the composition with the weight of each colour used so as to be able to make [more of the] same tone, and write the weight of it upon the lid of each box in which it will be kept; this precaution is indispensable because tones, once mixed with water, take a colour which it is difficult to obtain again.

The only remedy to an accident of this kind and which is always to be anticipated, consists of putting on a light brick or better still on a fragment of smooth mortar, a stroke of the colour which remains at the bottom of the vase, then dry it in a warm oven and seek afterwards by comparison the first tone by means of the colours in powder; one will thus succeed in getting, as near as possible.

Each tone and scale of the same shade which ought to be prepared separately, put in a box by itself and number it so as to avoid all confusion which would quickly become an insoluble puzzle.

We shall very soon reach a respectable number of boxes each containing a different colour and having its own appointed place. Nevertheless, I would advise these be limited as much as possible. Use an equal number of recipients either of glass or white china-ware, in which each colour is mixed with pure water. The quantity of water to be added to each mixture is very important but varies according to the nature of

the colours used ; experience is the best guide.

Ultramarine, cobalt blues and Emeraude green require less water than the earths, in general, especially the reds which very easily size the surface of the mortar that they cover. This disadvantage is barely visible during the execution, except to the very experienced eye, but becomes very evident when the mortar, once dried, gives it the appearance of having been applied to the surface, while all the others, properly used, present that delicate and marvellous colour which causes one to fancy, that the whole of the substance is coloured through. Only fresco painting can give with such a great power of vibration.

All colour mixed with water, viz, ready to be used for the day's work, cannot be used the following day, especially the very light ones because, in their mixture, a large quantity of lime is used. When the work draws to its end, in warm weather, the color is already carbonated and the patchings of any same color would be quite noticeable by the milky character of the shade.

BRUSHES

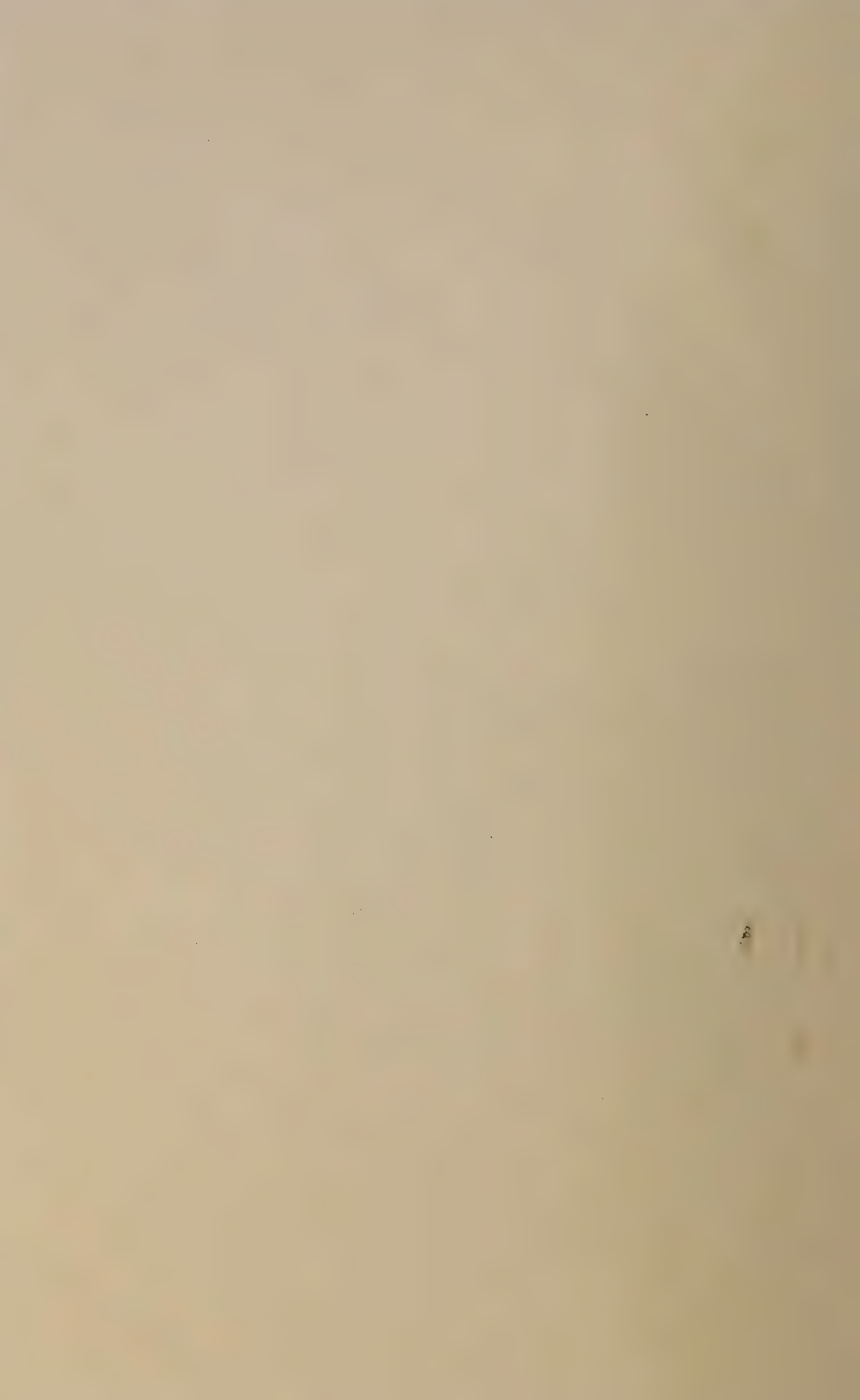
To deal with brushes, those of every shape and dimension are good enough to spread the colour. According to his own temper and work, every one will fix on one or other of these shapes. Personally, I prefer



AMERICAN MEMORIAL HOSPITAL AT RHEIMS

PLAY-ROOM. FRESCO PAINTING

(by R. La Montagne Saint-Hubert)



them rather wide and flat but always made of silky calf hair which is very soft and less costly than the sable, but certainly not which is so good as the latter which, moreover, should be utilised for making the line brushes which are indispensable in bringing out the contours or for certain detail requirements. There are also pig silks, fairly soft, which are equally excellent. Another advantage possessed by calf or sable brushes is that they hold more colour and consequently speed up the work. To sum up; that which is most important to know is that the brush does not, on account of too stiff hair, damage the mortar when laying on the colours.

The brush should, especially at the beginning of the work, pass over the surface of the mortar as a caress; in the evening, more rigid brushes present fewer disadvantages, for the mortar has already undergone a slight hardening which gives its surface more resistance. But, let us return to the preparation of the shades. After having decided by a synthetic idea, the number of the colours to be put on the rough outline, they are made up successively and according to relationship, as I may say. If the lack of experience does not allow the exact quantity of each colour for the ensemble work to be foreseen, it is advisable to weigh them while mixing them and write a note down. They can reproduce them in this way easily in an identical manner.

Although this precaution may seem exaggerated, it will be seen that it is of the highest importance when

we come to patching, in which work that is spread over two or three days has to appear absolutely the same in colour after the mortar is completely dry. The quantity of water that is to be added to the colours can also modify the appearance of it, but by taking note of the amount of water a temporary precaution would be taken, for the colour rapidly forms a deposit on the bottom of the recipient and although it be well stirred every time that brush is dipped into it, the latter takes up more water, thus, rapidly modifying the density of the colour and, in consequence, its power. Defective thickenings are often caused if attention is not paid to this. Therefore, control carefully and rather frequently, each colour employed so as to preserve its fluidity, a thing indispensable if they want to get very carefully the transparent and beautiful colourings of the fresco.

Before using a colour that has prepared, as I have said above, you should make sure that every tone entering into its composition is well and equally mixed, because some colours take more or less time to dissolve in water. If not, you will realize with surprise, the very noticeable changes in the same colour used at the beginning and the end of the day's work. When the colours put on the mortar are dry, they will resume colour they possessed when in powder before the addition of water. However, if for one reason or another, you wish to test it, you can put on a sheet of

rather porous white paper, a spot of the colour to be tested and expose it to the sun or some moderate artificial heat. If the shade is too weak you should add colour, and water if it is too strong, but this operation should always be carried out with extreme care. To sum up : prepare the whole of your colours for your composition and in sufficient quantities, keeping them in powder, in boxes carefully closed and free from dust, only taking out, as required, the amount necessary for the work of a day, since the same colour cannot be utilised the following day when the quantity of water considered necessary has been added.

The drying of a fresco does not take place in a homogenous manner. The light tones, made up with plenty of lime, dry first and the dark ones, above all those which have been left free from lime in the mixing, are the last to reach their definite colouring ; for instance, the burnt sienna earths and burnt umber. In addition, according to the season, the nature of the construction, a damp place for example, several months and even a year may be necessary in order that the complete drying of the mortar or wall may render the exact shades to the colours. On dry walls and during the warm season the drying process, although rapid, can easily require four to five weeks. Also the quality of the lime used has to be taken into account.

Generally speaking, it is always preferable not to paint in fresco during very hot weather, for, as the

mortar dries too quickly, the duration of work is limited and the mortar itself cracks. In case of necessity, it is advisable to shut up the room and to sprinkle water on the floor. Mild and damp weather is much the best for carrying out an important piece of fresco work. The cartoon and colours being so prepared, it would be wise before beginning to paint, to make sure of the proper hardening of the mortar, for, if the colour is applied too soon after the mortar has been put on the wall, there will be a risk of mixing it with the colour or more the lime still being on the surface by the action of the trowel, a weakening of the colours would be brought about.

When the design has been traced on the wall by means of the pouncing paper, put into the bowls a certain amount of the prepared colours and arrange them on a table. Make a separate note for each bowl with some sort of sign, for the shade it contains, for when they are mixed with water, they change in such a manner that you will be very quickly confused. Have at hand, also, a pail of very clean water, which you should renew frequently, so that you may wash the brush every time you change to another colour. The best thing would be to have a separate brush for each tone, but whatever quantity of brushes one may have, one of them is preferred in carrying out most of the work with the same brush. It is for this reason that I advise you not to neglect this precaution. In

the same way, do not neglect to wipe or press the brush between two fingers after each washing in order to squeeze out the water it contains ; because if this care is not taken it will gradually weaken the strength of the colour.

Cennino Cennini, in a treatise on paintings tells how he arranged his colours : « In recipients, natural colour for instance with the light on the left, and three bowls each one provided with a number in order to indicate its strength — shadow side the same disposition — finally one or more bowls for the reflections according to the composition, and the ground shades. »

It is always to your greatest interest to strictly observe this arrangements. It is often indispensable when a big work is undertaken, when the scaffolding causes a lack of light, preventing the distinction between a light or a dark colour put in the recipients, otherwise, it will induce you in grave errors.

After you have marked out your cartoon on the mortar by means of the pouncer, and before beginning to paint, you can intensify the design, correct it perhaps in places by means of a brush of sable hair, round and well thinned off, dipped in very fluid colours. To paint, begin by the shadows, which will rapidly give you a strengthened impression of the effect and the volumes. Even the most obscure shade that you might use in fresco painting should always be weak enough to allow the mortar to show through, and it will only be by

continually returning with the same shade that you will reach in the greatest strength of the shade and yet preserving its transparency.

Always wait a certain length of time before putting on the second coat so that the first one shall have penetrated well, for you will run the risk of disintegrating the mortar. After the shadows have been carried out everywhere, you will put on the shades of light leaving an interval for the half tones which serves as a passage but also serves to join up the shadow with the light. Take a very great care however, never to allow one colour to overlap on another one because, this will destroy its delicacy by rendering it irretrievably heavy. Then, by means of a very clean brush, slightly damped, you can, by passing it very delicately over each joining, of the colours, make them run one into the other without diminishing the freshness.

If the mortar is too soft to take the same prepared shade several times, you should wait and allow it to harden a little while finishing the complete outline. Personally, that is the manner in which I operate habitually, having found it the best. One is better able to judge the effect immediately of the values by covering once or twice, according to the fluidity of the shade and its respective colour, as I have already indicated.

I have told you that the shade, after it is perfectly dry resumed the colour it possessed when in powder, but do not forget, however, that when a colour is put

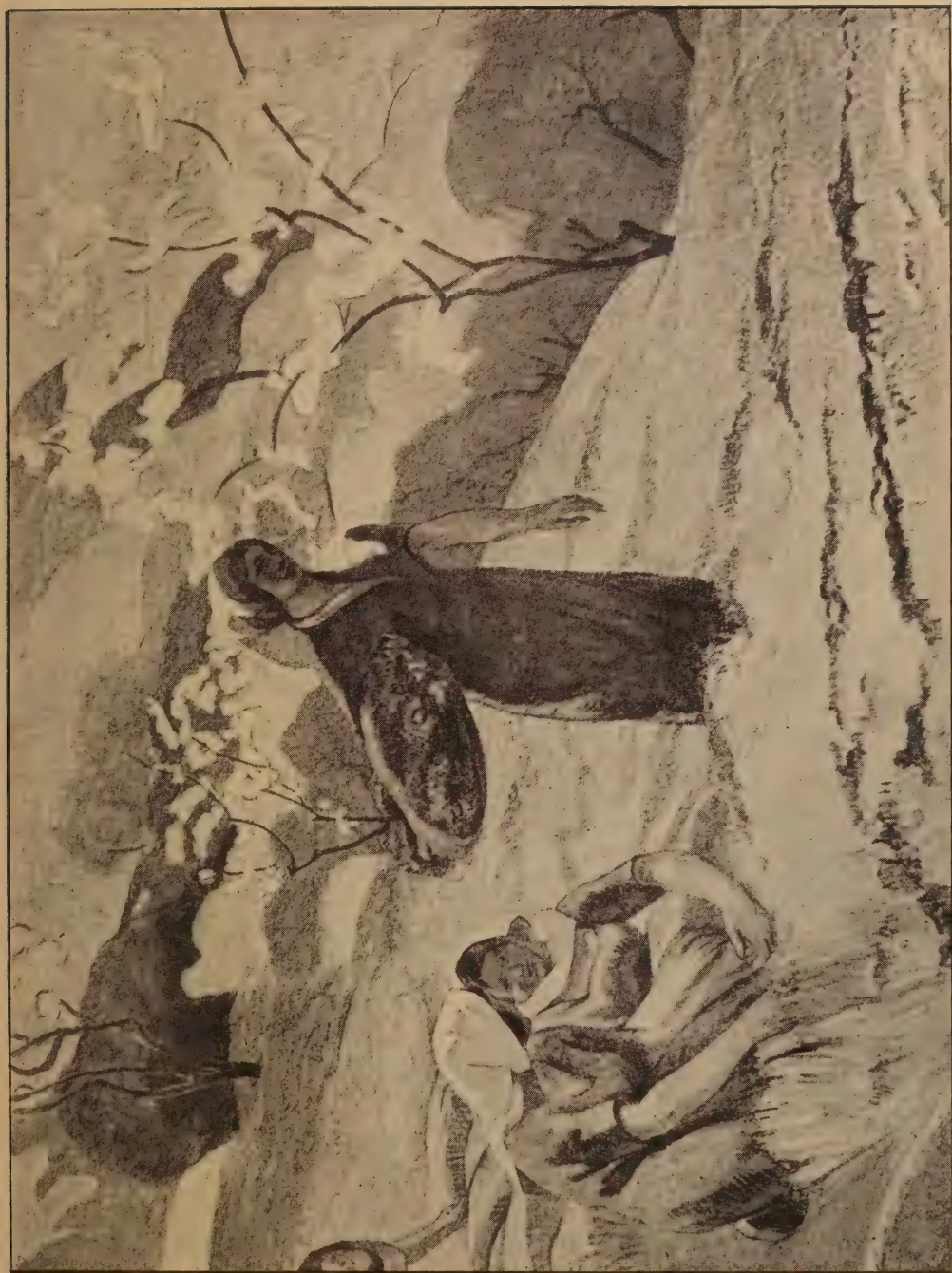
on in a light coat it will always be altered after drying, by the shade of the mortar which it covers. What you should always avoid, when painting in fresco, is to put a light shade on a portion reserved to a shadow or vice versa. The possibility of a superposition of the shades is one of the most delicate things in the art of frescoes. I shall deal with this again later. It would appear that this error can be rectified by a rapid washing, but, when dry, the place always shows up as a heavy and greasy looking discoloration. There is another way and that is to scrape with a small trowel, the surface of the mortar that has been covered, in error, with an incorrect shade, then smoot it off and leave it for a while before treating it again ; but a certain experience is always required in this operation although it does not give to the mortar a grain as pure as before. The best would be to take out completely the defective mortar and to replace it by new mortar. Although this operation appears to be a delicate one, it is easy and requires less time, giving a sure result.

When you have put on one or two layers of colours on the ensemble of your work, you can model them by means of a brush rather wide and flat, either dry or slightly damped with the shade that you wish to model. It is extremely difficult to say when you ought to devote yourself to this so delightful part of your work. Only the experience can advise you. The quality of the lime employed, the nature of the mortar, and the

temperature are so many items that can cause this moment to vary. Nevertheless, as a first remark, you will very quickly perceive that when a colour is passed over for the second time; too soon, it takes off the first coating. Thus you should always wait a certain length of time, viz, until the lime in the mortar has already acted on the colour and this moment is not far distant from the one in which the painted coating that has remained very fluid can bring out a model or be delicately melted into a neighbouring shade in order to form a passage. « It is then », as Cennino Cennini says, « that the moment has arrived, incomparably charming, wherein every touch made, seems to enter into the wall and to model itself without the slightest effort from the artist ».

This moment, so precious, and the one that the worker who has well calculated his day's work can seize opportunely, may last an hour or sometimes more, according to the season. It is the most important period with regard to the final aspect of the work.

Take good care not to pass this precious moment of the final work, for by continuing further you will be in trouble with other disadvantages which have their importance. At the end of the day, the last touches appear to be very good, especially those tending to bring out the dark values, but after several days, one is not a little surprised to find, that they have become so accentuated during the drying as to assume an inju-



PART OF SOME IMPORTANT FRESCOS EXECUTED FOR THE CITY OF PARIS : (HIGH SCHOOL, RUE DEBELLEME),
by, R. La Montagne Saint-Hubert.

rious intensity considerably affecting the ensemble. Besides, they appear to have been painted superficially. These last touches executed, at the end of the day on a mortar that is almost dry and which no longer allows a complete penetration, diminish by so much, the lowering of the shade produced by the drying. It is therefore necessary to pay the greatest attention to this work of the last moment. If a smoother surface of the mortar is required, this can be obtained by the means that I have already described to you during the course of one of our previous lectures.

I have told you to generally prepare a local shade for shadows and a local shade for lights with a half-tint for passages. The first shades, used very liquid, will perhaps lose their colour power in the drying but they will gain, by the transparency of the mortar, an extraordinary luminosity. Utilising this peculiarity, you can, in a way, almost completely model an object, a drapery, land and certain parts of the nude in the light or shadow by using almost entirely the same shade, very liquid, which you put on a second time for the half-tints and a third time for the shadows. When dry, these shades, by the vibration of the fresco in the light, will appear different but at the same time present a perfect connection. By using this process, you can even reach an excellent and extremely rapid execution. In this method of execution, you will need to observe for each colour, how many times the number of the

coats should be varied in order that they may attain their maximum intensity. For the cobalt and ultramarine or emeraude green, you will need to pass over the work, five or six times. For the earths, yellow ocre, red ores, and all the iron oxides, a second coat will very often give you the maximum of coloring. Take good note of the effect produced by each coat, for after a certain number of coating, the shade suddenly becomes heavy and loses its colour vibration and its light power.

For rather extensive decorative portions and repeated ornaments, the shade of the mortar can be reserved for the high lights or else, render them ever so little different by a light glazing. In this manner, I have several times obtained very interesting results with great force.

No matter what process is employed, it should be remembered, to never leave any intervals between two shades or even tiny islands of mortar not coloured, for although, they are hardly visible during the work, they will assume, when dry, such a clearness that these islands will be very visible and will give a dry and hollow aspect causing the fresco to lose all the softness and «envelopment» presented by another parts well covered.

Cobalt and terra vert being fairly difficult to use, the mortar appears to reject these colours while the other colors, particularly the iron oxides, are absorbed.

The ancients, to get over this difficulty, for instance, when they had a robe or mantle to be painted in blue, prepared the outline, by modelling the subject with a red or their « verdaccio » for the shadows, and going over in again when it had dried, with their blue. It is for this reason that their blues are so often detached from the paintings carried out at this period and that the red modelling reappears on the places from which the blue has fallen. I cannot understand why such clever people put their blues only dry. Its delicate application succeeds perfectly when the mortar begins to absorb, that is to say, during the second half of the day. This moment also can be advanced and the « gripping » of the mortar too, by slightly modelling the portion with a green mixture and an umber earth or simply with burnt sienna according to choice, for these underneath portions have always, a slight influence on the final shade of the blue put on afterwards. The blues painted in this manner can be washed without tear, like the other colours.

Terra vert is equally delicate to be used. Care should always be taken to use it very liquid, for it sizes very quickly the parts which are too much covered and assumes a heavy aspect. No matter what the colour is, if it is very fluid it can be coated several times without losing its purity and only increases its power. On the contrary, it will lose its power and nothing can cause it to regain it, if during the outlining the color is put on

too thick. Pure white is always very delicate to be used because the lime, of which it is made, is too ardent, sticking to the mortar unevenly in places and rendering certain parts heavy. Cennino Cennini speaks of a Sanguivanni white used by the ancient masters and the painters of their period and he even gives its mode of composition. This formula certainly lacks something for its results have never satisfied me. A very homogeneous white can be made up for easy use by putting a quantity of lime into a large recipient and covering it with water. This operation should be carried out ten or twelve days before used. The water should be changed every day, taking care to stir the mixture well. When it is required for use, pass it through an extremely fine silk sieve, without pressing it in any way, so as to eliminate all the impurities or particles remaining indissolved. The part which passes through gives an excellent white which can be more or less diluted by the addition of very pure water.

The complete execution of the fresco requires an infinity of means. I have told you of the uses to which one single colour may be put by the renewal of its superposition up to a certain limit. I would rather, however, only speak to you about the essential means to lead you to the purest execution of the fresco. By means of experience, every artist will be able to discover particular methods, for, this profession can adapt itself marvelously to all tendencies provided that they have the

thought of the decorative sense alone in the plan.

I might even go so far as to say that the painter who is sufficiently well experienced and provided with a definite gift can, without the aid of the pouncer, execute designs after nature, thus, providing a great diversity in the ensemble of the work. For the decoration of their vases, the Greeks adopted this freehand execution as did all the Orientals, the Persians and Hindous.

During the extremely hot days, you may possibly find yourself before a rather large stretch of mortar already somewhat dry and on which the colour that has been laid and that has been absorbed too rapidly will develop a certain hardness since it will not have had time to penetrate all over equally. You should take care to freshen the mortar before putting on the shades by spraying pure water as equally as possible over the whole of the portion not painted, in order to make sure that the colour will take evenly; but this simple expedient should only be employed in cases of real necessity, for the water draws the lime to the surface of the mortar and the colour put on afterwards are mixed and weakened during the drying.

The best thing for the execution will be for you to always hasten to apply the first coat over the whole of the mortar with colours as fluid as possible. They will slacken up the « taking » all the more at the same time preserving its freshness.

When you would have to execute a fresco in the open

air, you should always accentuate the colours, above all for the parts which are likely to have the sun shine on them. During the execution, surround the scaffolding with a cloth completely closed in so that the dampness may be maintained as much as possible and, if necessary, sprinkle water on the ground, but, above all, avoid allowing the sun to fall on the mortar thereby hastening the drying and causing a bad adherence of the colours and even cracking the surface of the mortar more or less.

PATCHINGS

If the work on which you are engaged requires several days for its completion, as is often the case, you will have to carry out two very delicate operations; Cutting and Patching. As soon as you have covered the surface of your mortar with an entire coating of colours, I should advise you, whilst resting a moment, to make up your mind as to the portion of the work you think you will be able to complete perfectly during the day. I draw your attention to this point, for, when commencing, and often even after, a certain amount of experience one is carried away, when tracing on the cartoon the successive portions of the day's work, to the extent of outlining spaces which are far too vast so that the few hours of which one disposes, would be insufficient for a definite work. These hours of course are those between the laying of the mortar and the moment when the surface slightly crystallised and no longer allows the colours to penetrate and consequently to take body with it and to resist time. This exaggeration in the dimensions of the work of one day has ma-

nifested itself very frequently towards the end of the Renaissance in Italy and artists like Tiepolo, to only mention him, finding themselves before too great a work finished it when the mortar had « taken » or even the days following, « à temperar », to avoid breaking it down and recommencing a portion that had remained in the outline state.

Therefore, when you are completely decided as to the portion you think you will be able to finish in the day, you will trace out the cuttings lightly. As far as possible, avoid doing what one is quite naturally tempted to do, that is, to follow a contour in a figure or any precise form whatsoever, architecture, horizon of the sea etc... for it is so difficult to put on the patchings that the new mortar often overlaps, be it ever so little, on to that of the day before. Trees, bushes, and folds in the clothing are preferable. In the dark portions, the patchings will be hardly visible but in the light ones it will be necessary to take the greatest care in its execution.

Diagonal or broken lines are always preferable; those cuts that trace vertical or horizontal lines on the mortar leave there on an arbitrary imprint which is almost impossible to dissimulate in the composition.

Having traced your cutting, it remains for you to detach the portion of mortar which remain on the outside, with the trowel. Go to work very cautiously so as not to take away fragments from the other side of



AMERICAN MEMORIAL HOSPITAL AT RHEIMS
DINING-ROOM. FRESCO PAINTING

(by R. La Montagne Saint-Hubert)

the tracing. Then with a knife you can go along the cutting so as to make the edges perpendicular with the wall.

I cannot advise you too strongly to carry out this operation in the middle of the day. It is also possible to do so in the evening at the end of the task, although more delicate but the following day when the mortar has already « taken » it would inevitably cause crackings on the surface.

The following day, after having moistened the part of the wall up to the previous day's work, several times, one can begin to put on the mortar following the contours but not without taking very great precautions in order not to pass the trowel over the parts already painted. This should be done by means of small successive coats which are delicately pushed along as far the cutting made the day before in order to rejoin the old mortar and to establish the fresh layer at the same level as that already laid on.

You should always give indications on the wall or the rough casting as to the surface that the mason should cover with mortar the following day, exaggerating this somewhat in order that a clean cut may be made in full mortar.

If, by accident, when painting, you touch a part previously painted, do not be surprised if you see spots produced immediately. They will disappear in the long run during the final drying.

In tracing your cutting, do not try to draw too fine a line so that the mason cannot follow it, or by clumsiness, he may alterate, to the detriment of your design. Take care that he does not put even minute particles of the new mortar on the old one by accident, for these will, after a time, inevitably detach themselves leaving in their stead, white spots which give the worst of effects.

RETOUCHING

It is to be clearly understood that I intend to speak of a remedy against an evil that I would advise you to avoid at any rate and one which will not happen to your work if you follow out very carefully the instructions that I have successively given you. Retouchings have caused the death of the fresco. In the present Renaissance, for which I have worked so much, and on account of the enthusiasm which you display for this marvellous profession I am convinced that you will be able to avoid such retouchings by carrying out a beautiful execution.

It is true, nevertheless, that a small portion of your painting which may turn badly in the drying, that a grave error may come to dishonour, in some way, a fine piece of work carried out with dash, or even that small retouches will be required in the case of colorations the value of which has paled too much in the drying.

The ancients carried out these retouches with the

yolk of egg separated from the white, well beaten up, then mixed with ten times its own volume of very pure water and beaten up anew ; but a yellowish shade is always present. This yellow can be taken off by pounding it in a bath of sulphuric ether mixed with water. This gives a white colorless precipitate. Watering down gives a substance that is more mat than the fresco. By adding the white of the egg to the mixture, a little brilliancy is obtained but the retouches made in this way do not always last and often detach themselves from the mortar in light flakes as is evident on the greater part of the primitive Italian frescoes and even those of the Renaissance. Carried out on an interior fresco, these retouches would only have so to speak, an ephemeral existence.

The only possible retouching is carried out by means of a solution of Potassium silicate mixed with one sixth its volume of water and with the colours. This solution takes body with the mortar giving it at the same time an extreme resistance and soldering the molecules of sand. It has, above all, the great advantage of leaving upon the mortar, if one does not make an abuse of it, a semi brilliant matter, so like that of the fresco, that it would be very difficult if not impossible for an experienced eye to detect it. However, these various methods are only palliatives and I strongly recommend you to avoid them as much as possible if you wish to retain in the fresco its beauty and purity.

I think that I have taught you all the most important things to know before embarking on the execution. One cannot insist too much on the necessity of keeping all powers alert in the practising of this profession which exacts all the human strength at the same time as the highest spiritual faculties of a man and which gives in return, the serene joy that artists often experience when they climb the scaffolding in the morning.

The young man who desires to give himself up to painting in frescoes can develop therein both his physical and moral force more than in any other work. Your repeated efforts and the experience that you will gain will bring you, I am sure, new means better adapted to your originality and your researches. I am persuaded that you will not give up in front of certain difficulties; for the relish of the numerous pieces of work that you may carry out will be so catching and your tenfold efforts will rapidly arrive at complete and absolutely perfect results in this artistic profession which is so much in harmony with your young and powerful race and which is so much gifted for new and original conceptions and their rapid spontaneous realisation. By your work, America will see the ancient Fresco grow up afresh, blossoming forth in flowers rendered more marvellous by the appropriate touch, by means of which your modern sense of adaptation cannot fail to enrich it.

TO GOLDEN CERTAIN PARTS OF MORTAR

If you want to have a smooth surface, as the one prepared by the primitives for the aureola of Saints, or even in relief for arms, jewels or certain parts of clothing ; prepare liquid plaster and cover with it the part to be goldened. If you desire a surface, in relief, spread progressively several coats of plaster till a sufficient thickness. The next day, after the drying of the plaster pounce it very carefully, in rounding the edges if the surface is in relief.

When the surface to be goldened is very smooth, cover it with turkish red and medium siccative. When this preparation is almost dry, put on the golden sheet with most care, in slightly covering the edges of the preceding gold sheet with the following one.

You can, also, golden directly on the mortar ; its rough surface, gives the gold, a vibration particular and of the most charming aspect.

Gold applied, in this way, lasts for ever.

TRAVEL NOTES

We should, at the moment when fresco, led towards its Renaissance, take a further stride forward every day, recall to mind a man whose qualities as artist and whose sensitiveness were combined with a passionate love for this fine profession, a man who, during the whole of his existence studied and searched for, without ever tiring, the secrets of painting in fresco, Victor Mottez.

One of the first trials that he carried out in his studio at the Villa Medici in Rome was, after his departure, found so beautiful by Mr. Ingres, that he gave orders to cut away the wall and send the painted portion to Paris. It is now in the Louvre and is the portrait of a woman, in profile, of an incomparable power and purity.

I should like, before terminating these lectures, to communicate you the personal impressions that a repeated study of the ancient masters in fresco-painting have conveyed to me and the syntheses that I have been able to draw therefore by deduction. I will impart

them to you without the slightest didactic sentiment and still less as an ideal orientation. In art, liberty, above all, is the powerful genius that we should adore. In each one of you there is a fruitful germ, the originality of which should be respected as the most precious thing. I offer you rather, these scattered notes born of the unforeseen in the admiration of immortal works and if one day, as I am sure, you hope to do, you are permitted to find yourselves before these masterpieces, if the recollection of these impressions comes back to you and you find therein some similarity to your own personal opinion, believe me that I shall be very happy to have been able to guide you so well.

The frescoes that have survived in France in spite of the injuries of time, appear before us without any retouching whatsoever. The indifference of several centuries, if it has taken no heed for their preservation, it has, at least, respected all its purity by preserving them from sacrilegious restoration. In the Chartreuse of Villeneuve-les-Avignon, on the right and left of the Calvary there are several upright figures of Apostles separate one from the other, impressed by the same grief, with, however, the refinement of personality that the artist has been able to give differently for each one.

Sainte Madeleine, never-to-be-forgotten with her face lined with tears, expressed by several disordered lines it seems, so much is their expression great amongst the long hair which, in layers here and there spread a

note of golden red on the meagre body covered by rags of poverty ; but this strip of cloth is rich in the rarity of its colour and all this figure is noble by the material and the expression, in spite of the touching realism of its features. On another portion of the fresco the sky offers a glimpse of blue through the sinister clouds, birds pass by and children on the ground play with all their ingenuousness. It is the equilibrium of nature and it is also a moving contrast. On the other side are Sainte Martha and Saint John, also marvellous on account of the detail still soberly treated, the ensemble of a powerful expression and finally the delicate character of the material. At a distance, before it is possible to distinguish in a precise manner, the scene and the gesture of the personages, one is at once struck by the charm of this huge tapestry with such rare colours, of which the personages and the objects trace on the wall, an arabesque well laid out, in the care for harmony with the lines of the architecture surrounding it, seeming to even attach itself thereto, at the same time preserving the domination of the line which is to express for the ensemble of the composition, its character of calm or movement, of joy or grief ; the repartition of the portions of colour, their volume, the balancing between themselves. All is thought out, equilibrated, desired, without its appearing so.

Art of the first casting, without hesitation nor retouching, At Toulouse, in the ancient Jacobin Convent, the

Saint Antonin Chapel entirely covered with frescoes — « The choir of angels », XIV th century treated as a tapestry — harmony in three colours, put on in gradations — violet red, greenish blue and grey — each angel is placed on a cloud the harmonious contours of which are cut out like lace with its festoons turned back in turn offering a diversity of colouring that is more vivid on the inside.

This decorative ensemble by its sobriety of colouring spreads a penetrating charm in the chapel and seems like so many pieces of stained glass in the ogives of the walls.

In the greater part of these XIV th century French frescoes, the subject, in a way, disappears and the artist has placed all the interest in the composition of the coloured parts, in the harmony of the colours, the tracing of the lines always with a predominancy and finally everything is so well understood and imagined that it does not seem possible to do away with the slightest particle.

I have recently seen the Italian frescoes ; I wanted to assure myself as to their state of preservation but I also wanted, by a long and minute observation, to determine the restorations and retouchings carried out at different periods and, unfortunately, too often still in our own days.

Certainly the intention was excellent, but the means employed were very often far distant from those em-

ployed by the ancient masters. I have even seen, during the course of restorations that were being carried out in the Chapel of Sta Croce in Florence, certain colours being utilised of which the chemical composition would resist but a very little while against the powerful action of the lime if they were used on fresch mortar. An eye that is very little experienced can easily pick out the difference and separate off those parts that are without retouches and on which the fresco presents, with a powerful material, colours of an inimitable delicacy.

Amongst all the retouches that certain frescoes had undergone the most disastrous was the encaustic. Personages who were very influential during their period were able to convince their contemporaries of the necessity of giving more value to these paintings that were already ancient ; the result was deplorable, these frescoes appear to be dulled, the wax, in penetrating into the mortar, having given a heavy look to the colours ; moreover, this brilliancy that the encaustic has given to the surface, by reflecting the light from the windows, no longer allows the composition to be seen in its entirety.

The Sybilles of Raphael at La Farnesina have been waxed and appear to be a bastard painting without charm and without purity.

The painters of antiquity painted on stucco that they wanted to be of very fine quality that is to say, very smooth. They prepared the whole of the wall in one

single piece, they did their fresco painting just as long as the wall remained damp, and if, on account of the size of the work, they were not able to do more than the outline, they finished the task on the dry wall with thick touches of colours prepared with wax. In the places where the retouchings have fallen away, the fresco appears with its design traced with hollow lines on the fresh mortar.

The Italians, instead of retouching with wax, made their own retouches either with milk or with egg. In Italy, there are, above all, three towns in which there are the most beautiful frescoes it is possible to admire Assisi-Florence-Pisa (and Rome of course).

Giotto, in its ensemble, is the richest and the most varied also, but, above, all he is the most impartial observer of nature and its synthetic translator who, of all others is the one who approaches the nearest to our modern sense of art by movement and by light. Of all the great decorators, he is the first to have expressed freshness in the High lights and reflected in the warm shadows. He banished completely all black from the flesh and hair. The faces have a locality of pinky white or brownish white modelled in two shades. The shadows have always a very soft value which creates that impression of youth and serenity which is conveyed by all his works.

Vigour in the groundwork is always established in his works or by the clothing of a personage. Finally

there is always a predominant colour which enlivens and delights. His most vigorous colour is a very beautiful red which was then called Sinopia, but for the ensemble I do not think that one could imagine a greater delicacy of colour. His style is free and varied. He first of all paints by large flatnesses and goes over it again by means of hatchings, but without any system, following only the fancy of his sensibility; besides, these hatchings are barely apparent so much is their colour harmonious. Finally, in the open air, his frescoes appear to be of a very sustained colouring.

The conception of a work of art may be long, the outcome of renewed trials, divers attempts and spontaneous modifications. Its execution should be rapid. It is far better to begin it all over again rather than carry out certain partial modifications which are often somewhat hesitating and which always leave an impression of fatigue.

The old masters have left us an infinity of designs, of ten almost similar, which testifies to their care to approach their conception in the realisation of their works as near as possible. These multiple studies put them in the position of seeing their work in imagination, even in the smallest details, that they were able to carry out these pieces of work at which we marvel on account of their freshness and ardour, and which surprise us by the dimension of the work executed in a day.

Taddeo Gaddi, in the church of Santa Croce at Florence shows us easily in his large fresco, « Constantine Carrying the Cross », immense pieces made from the morning to the evening : in one place three heads, three draped figures in the foreground and which are slightly bigger than life size, form another piece ; a great part of the country scene with two horses cut off in the centre form another ; all this in life size and of a perfect finish ; this fresco is made up of 15 to 18 parts, that is to say so many days' work. In the Vatican in the « Burning of Bourg » by Raphael, 24 parts, he therefore took 24 days to carry out this huge composition. The size of the parts explains the multiplicity of these master's works and one remains astonished that this did not affect the perfection of their execution.

In Masaccio also, the whites and blacks are only in the garments, never in the shadows, they are light and very localised, the flesh shades are brilliant. All the draperies of the personages are in one piece. The pieces of work in which the heads are portraits, are not so big, however in « Saint-Pierre reviving a child » a piece of work is to be seen containing eight heads and two hands. His seams only rarely follow the contours as is done in the primitives, whilst, for preference, Raphael made them come into a fold in the clothing, land or architecture.

The ancients search very much in order to find the

exact relationship between the shadows and the high lights. Giotto and the Angelico possessed admirably this secret; they generally outlined with a green earth half-tint and went over it with glais for the high lights, shadows and reflections.

The fresco only allows the use of a limited number of colours and in spite of these small resources, it is remarkable to see to what richness the old masters have been able to attain with such simple means. When one enters into the low church of Assise, one is struck by the harmony of the frescoes which cover it. they seem to be rather, marvellous Persian carpets hung from the arches and on the walls. One of Giotto's great principals is to never allow more than two shades to dominate in the decoration; hence that impression of power which is brought by the sobriety. Indeed, the quantity of equal values destroys the harmony. In the big ribs of the vaulting in the low church, red and white are predominant to such an extent that in spite of the blues greens and yellows which enrich them, the whole, from a distance, only appears to be made with these two shades.

No other painting offers a resistance equal to that of the fresco; in many places I have been able to admire certain of them exposed to all the injuries of the weather and which are perfectly preserved, offering still, the charm of their magnificent colour that the sun itself, flooding them at times, has not been able to pale.

At the Vatican, Raphael, although he conformed himself to the ancient processes, has painted in a broader manner. His generous and softened high lights seem to be made of real matter. The outlines, both in the high lights and the shadows, are frank and broad, and the passages are always of fresh green semi-tints.

But Raphael was already suffering from the « *chiaroscuro* » which was developing and which created a new period of art. He went over the outline again with earth for shadows which, put on as *glacis* or in hatchings, led him to obtain a very great vigour and finish. This vigour was a condition of the day, one deplores it when one sees the brilliancy and lightness of the parts which have not received these *glacis*. « The flight of St. Peter », « The Mass of Bolsene » for instance, which are carried out in a simpler and franker manner, are certainly his finest pieces of work and are the purest in the fresco sense. On these subjects, which are placed above or on each side of the windows, a too great vigour would have led him to black. Certain heads in the « Last supper dispute » which have been left in the outline state and without this *glacis* of umber-earth possess an incomparable fineness. If Raphael made an abuse of these *glacis*, one cannot condemn him entirely ; this umber earth is besides, an extremely useful colour and one which gives very fine greenish brown shades, when used alone. Light umbers and those coloured by reds such as Giotto used, have more beauty

and richness ; however, Raphael, although he perfected the shape and made it more refined, preserved the qualities of the primitives both for colour and harmony. His shade relations are just and his passages are delicate.

It is not without a very strong emotion that I am going to speak to you of Michel Angelo, when entering the Sixtine Chapel.

The ensemble of his work, displayed over your heads, produces such a deep impression that it cannot be described. His genius has been able to create an ardent and unique beauty which will always touch us but which it might be dangerous to follow. Moreover, this art is a reflection of a period that nothing can cause to be revived.

From a purely technical point of view, the material of the frescoes in the vaultings is very fine but the distance prevents a detailed observation. As for the only one that it is possible for us to see close to, « The Last Judgment » it appears to us all covered with spots of wax and blackened by the smoke from the candles. A careful washing would easily take this away on a fresco that has been well carried out. But there are, it appears, so many retouches, that this cleaning cannot be dreamt of.

When Michel Angelo began the decoration of the Sixtine Chapel he had never done any painting in fresco ; it is said that he sent for painters who carried out certain parts of his decoration in front of him ; that

he destroyed their work afterwards and commenced the marvellous ensemble in which, above everything else, the sculptur and architect appeared. For the figures, in the vaulting, the mortar is fine and smooth.

One cannot determine exactly his method of painting but the execution is marvellous in its liberty and sentiment. The perpetual anxiety of his artist's soul can be read in the final form which is often remote from the lines engraved in the fresh mortar.

One can say that Michel Angelo has painted his frescoes in the same way that he undertook his work in marble, with the same dash. This took him to the base of a statue as the « slave » only outlining the feet the by colour in the block remaining just sufficient as a pedestal for the figure.

Mysterious profession ! the dominant colours are— for the faces silver grey and red ; reddish greys or greenish greys for the shadows, the whole being reinforced by a powerful feature underlining this inimitable comprehension of the form and gesture : to cover the ensemble with draperies intense reds and blues, greens and often also warm pinks, mauve blues almost pale.

As Giotto has formulated it, one finds, in Michel Angelo, the principle of the coloration of the high lights, this manner of powerful expression and decorative unity, only utilising colour to accentuate what he wants to say.

Botticelli has been able to leave in several frescoes,

with the beauty of a perfect technique, an art of great originality in which the expression of naive youth that predominates, mingled with the refinement of his day, a contrast, the charm of which always strikes us deeply.

In the Louvre Museum, in the fine vestibule architecture in front of the Victory of Samothrace, ascending the stairs which lead there to the hall, one is struck by the beauty of the two large panels that are so admirably placed ; to their quality of art, composition and profession, there is added the immediate and powerful evidence of the fresco which, by the harmony of its colours and material with the stone or marble, has defined, in an immortal manner, the ideal technique for mural decorations.

I have already spoken to you of the Renaissance of fresco. It is in you that I put all my confidence and all my hopes.

During my stay in the United States, I have much admired American institutions.

I have admired the institutions which allow promptitude of action, energy of resolution and individual initiative to be combined with the complete liberty of the citizens under the support of the State and the multiple foundations of generous donors. I believe that this is the only country in the world where that is met with. You have all the power ; you have all the Liberty ; and it is on that account that I admire you and envy you. If I have sometimes needed all my resources of action

and will, I am convinced that you have, more than all others, aided me in their fortification by your marvelous example.

It would displease me to distinguish America from France, for though many divergencies of views separate us, we always find you in perfect union with all that is beautiful and best in the two nations.

Yes, America and France have many features in common in their manner of understanding and feeling. Fate has associated us in the bloody works of the war for the two greatest struggles that ever have been, for Justice and for Liberty ; it is therefore not surprising to find in our hearts, those deep fibres that nothing will be able to undo. It is in this testimony and in order to establish more frequent contacts of our natures and tendencies, that the late Mr Lloyd Warren worked for Franco-American Association. The finest homage of gratitude that it befalls us to pay to his work will be in common effort, in your personal researches which make a treasure of precious work and delightful reminiscences out of the few months spent at the Fontainebleau School of Fine Arts.

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